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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,530	09/22/2003	Peter Fromherz	2923-566	5890
6449	7590	07/31/2006	EXAMINER	
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			MARTIN, PAUL C	
			ART UNIT	PAPER NUMBER
			1655	

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/666,530

Applicant(s)

FROMHERZ ET AL.

Examiner

Paul C. Martin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Claims 1-13 and 23 are pending in this application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

All objections and rejections not repeated in the instant Action have been withdrawn due to Applicant's response to the previous Action.

Applicant's arguments, see Page 9, filed 06/09/06, with respect to the rejection(s) of claim(s) 1-13 and 23 under 35 USC §103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

However, upon further consideration, a new ground(s) of rejection of claims 1-13 and 23 is made in view of Fromherz *et al.* (WO/2001/07002) further in view of Plugge *et al.* (2000).

Claims 1-13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fromherz *et al.* (WO/2001/07002) further in view of Plugge *et al.* (2000).

The teachings of Fromherz *et al.* were discussed in the previous Office Action dated 03/09/06.

Fromherz does not teach the use of a medium, which has a salt concentration of  $\leq 100$  mM/L or the use of an array comprising a multiplicity of cells immobilized on different electrodes for the purpose of testing a multiplicity of substances.

Plugge *et al.* teaches a method for determining whether a substance is a modulator of a target component in a cell, comprising the steps of:

Preparing a cell, containing a potassium channel, wherein the cell is immobilized on a potential-sensitive electrode (Pg. 1642, Column 2, Lines 6-12 and Figs. 2 & 3), bringing the compounds amantidine, cesium and barium in contact with the cell, in a medium which has a total salt concentration of less than 100 mM/L (Pg. 1643, Column 1, Lines 11-21 and Column 3, Lines 45-55, and Fig. 4), measuring the signal at the electrode due to the target component, and determining the effect of the substance to be tested on the measurement signal (Pg. 1643, Fig. 4).

It would have been obvious to combine the method Fromherz *et al.* for the determination of whether a substance is a modulator of a target component of a cell with the method as taught by Plugge *et al.* for determining whether a substance is a modulator of a target component of a cell wherein the method utilizes a medium which has a salt concentration of less than 100 mM/L because the method of Plugge *et al.* showed that the potassium channel Kcv functioned optimally at 50mM KCl, 1.8mM CaCl<sub>2</sub>, 1mM MgCl<sub>2</sub>, and 5mM Hepes/LiOH and in solutions without NaCl.

The ordinary artisan would have been motivated to apply the low salt solution of Plugge *et al.* to the method of Fromherz *et al.* in order to test the effects of test compounds on potassium channels under conditions optimal for potassium channels. The ordinary artisan would have had a reasonable expectation of success based upon the demonstrated success of Plugge *et al.* in using a low salt solution in a similar method as described by Fromherz *et al.* because both methods are drawn to the analysis of potassium channels in cells and the effects of modulators thereon through electrochemical detection means.

It is noted *supra* that Fromherz *et al.* teach the method of cultivating a multiplicity of cells immobilized on multiple electrodes. It would have been obvious to the ordinary artisan at the time of the invention that if the technique were suitable for the testing of a single substance that it would take only a little further modification to practice the technique using multiple substances.

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The ordinary artisan would have been motivated to do so because a method of screening multiple substances would be more efficient and cost effective than simply screening one at a time, and the ordinary artisan would have had a reasonable expectation of success based on the previous success of the technique on testing a single substance.

### ***Conclusion***

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole is *prima facie* obvious to one with ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

No Claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul C. Martin whose telephone number is 571-272-3348. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Martin  
Examiner  
Art Unit 1655

07/17/06

**PATRICIA LEITH**  
**PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'Patricia Leith', written over the printed name and title.